

## Issue 93 Digital Meeting Etiquette

---

- Welcome to the Issue 93 Workgroup meeting 2 – we'll start shortly
- No video please to conserve bandwidth
- Please stay on mute unless you need to talk – use IM if you can't break through
- Talk – pause – talk
- Lots of us are working remotely – be mindful of background noise and connection speeds

# ELEXION

---

**Issue 93 - Metering Code of Practice  
Review**

---

Meeting 2

14 June 2021

# Meeting Agenda

Objectives for this meeting:

- Reconvene the Issue 93 workgroup.
- Review redlining completed to date
- Share prioritisation scores
- Agree next steps

Agenda Item	Lead
1. Welcome and meeting objectives	Iain Nicoll (Chair)
2. Summary of Issue 93 Aspects	Elexon Metering Team
3. Review Updated Redlining	Workgroup
4. Priority Scores	Elexon Metering Team
5. Next steps	Andrew Grace (Lead Analyst)
6. Meeting close	Iain Nicoll



# ISSUE 93 ASPECTS

---

## Summary of Aspects

---

The following aspects have been highlighted to be in the scope of the metering Codes of Practice (CoP) Review

- A\_01 Consolidation of the CoPs and Remove Obsolete Requirements
- A\_02 Half Hourly (HH) vs Non-HH (NHH) requirements
- A\_03 Duplicate communications paths for Metering Equipment within CoPs 1 and 2
- A\_04 Manufacturers for main and check Meters and calibration checks requirements
- A\_05 De-energised circuits
- A\_06 Use of MWh vs kWh
- A\_07 Consideration of DMP vs AMP – Metering Dispensations and the need to compensate (if necessary)
- A\_08 Number of measuring elements
- A\_09 Tightening the minimum accuracy classes for Meters (CoP5) and CTs (CoPs 3, 5 and 10)
- A\_10 Accuracy of Active Energy for sites providing Reactive Energy Services (e.g. Stability Pathfinder project)
- A\_11 Relevant CoP for embedded circuits
- A\_12 Future proofing changes to BS EN/IEC Standards
- A\_13 Security of using public IP addresses for Communications to Metering Systems
- A\_14 Requirement to provide SLDs for HV and EHV sites
- A\_15 Monitoring of Voltage failure alarms
- A\_16 Obsolete Metering Equipment
- A\_17 Settlement Outstation memory requirements





# UPDATES

## Updates

---

Red lining has been focused on CoP2 as an example and once agreed can be used in other CoPs where applicable:

- References to standards updated;
- PARh references removed;
- Definitions aligned with other CoPs;
- Monitoring of Voltage failure alarms; and
- Future proofing changes to IEC Standards.

Red lining on CoP3, CoP5 and CoP10 has been focused on tightening accuracy classes:

- References to standards updated
- CT and if applicable Meter accuracy classes updated;

## Question for Workgroup

The CoPs still refer to BS EN/IEC 62053-11 (Electricity metering equipment (a.c.). Particular requirements. Electromechanical meters for active energy (classes 0.5, 1 and 2)) – **Do we want to remove this requirement and limit new installations to static meters?**





# TIGHTENING THE MINIMUM ACCURACY CLASSES



---

## Tightening the minimum accuracy classes for Meters (CoP5) and CTs (CoPs 3,5 and 10)

---

### Proposed Solution

#### Meters

- Change the minimum accuracy class in CoP5 to BS EN/IEC 62053-21 Class 1.0 / MID 50470-3 Class B

#### Current Transformers

- Change the minimum accuracy class in CoP3, CoP5 and CoP10 to BS EN/IEC 61869-2 Class 0.5S

CTs more accurate at 20% rated current (0.25% better); 5% rated current (0.75% better); and test point at 1% (1.5% Ratio Error)

Improves Settlement accuracy where standard ratios of CTs are used and the Primary is significantly higher than the prevailing load of the circuit e.g. 600/5A CT measuring maximum of 60A.

---

## **Tightening the minimum accuracy classes for Meters (CoP5) and CTs (CoPs 3,5 and 10)**

---

### **Progress**

#### **Meters**

- CoP5 updated to accuracy class BS EN/IEC 62053-21 Class 1.0 / MID 50470-3 Class B

#### **Current Transformers**

- CoP3, CoP5 and CoP10 updated to accuracy class BS EN/IEC 61869-2 Class 0.5S

Change Proposal drafted.

### **Still to do**

The requirement within CoP4 and BSCP27 to present Calibration Certificates on request will be removed. This will greatly reduce the number of non-compliances given by the TAA for the non-provision of Calibration Certificates (related to LV CoP3, 5 and 10 sites).

There is one issue that needs to be discussed.

## Tightening the minimum accuracy classes for Meters (CoP5) and CTs (CoPs 3,5 and 10)

---

### Outstanding Issue

There is a note in the IEC standard about matching 'S' class CTs to 'S' class Meters.

NOTE 11: For transformer operated meters paired with current transformers (CTs) according IEC 61869-2:

- the standard CT measuring range is specified from  $0,05 I_n$  to  $I_{max}$  for accuracy classes 0,1, 0,2, 0,5 and 1 and these CTs are used for meters of class 0,5, 1 and 2 according to this standard;
- the special CT measuring range is specified from  $0,01 I_n$  to  $I_{max}$  for accuracy classes 0,2S and 0,5S and these CTs are used for meters of class 0,1S, 0,2S and 0,5S according to 62053-22: 13/1780/CDV ;
- combinations of standard CTs and meters of class 0,1S, 0,2S and 0,5S are subject to an agreement between manufacturers and purchasers;

Does the group have any concerns about the Meter operating below 5%  $I_r$  when connected to a Class 0.5S CT that is accurate down to 1%  $I_r$ ? Should it be mandated to use 'S' accuracy class meters (i.e. 0.5S)?





# FUTURE PROOFING CHANGES TO BS EN/IEC STANDARDS

## Future proofing changes to IEC Standards

---

The CoPs rely on British Standards Institution (BSI) / International Electrotechnical Committee (IEC) standards for Meters, Current Transformers and Voltage Transformers

These standards are periodically reviewed every five years:

- They may be given an extension without amendment;
- They may be reviewed and amended by an industry expert group; or
- They may be withdrawn

Where they are amended they may keep the same reference number or they may be given a new one (e.g. the standard for Instrument transformers – Part 2: Additional requirements for current transformers changed from 60044-1 to 61869-2 in 2012)

There are two issues where the reference number changes:

- Meter Operators and LDSOs need to keep a stock of Metering Equipment and will have units produced under the previous standard; and
- The CoPs will refer to the previous standard until a CP process is completed and they are updated in a BSC release.

We have proposed to limit it to Measurement Transformers only

# Future proofing changes to IEC Standards

---

## Proposed Solution

### Amend the section 5.1 of CoPs:

Where a measurement transformer has been tested and stamped to an iteration of the applicable BS EN/IEC standard and that differs from the version referenced in this Code of Practice (i.e. BS EN/IEC 61869-2; BS EN/IEC 61869-3; BS EN/IEC 61869-4) measurement transformers may still be used providing the requirements in clauses 4.3.1 and 5.1.3 are met and if one of the following conditions is met:

- All measurement transformers purchased post implementation<sup>5</sup> of the latest applicable BS EN/IEC standard should be manufactured in accordance with that version of the BS EN/IEC standard that has superseded the version of the BS EN/IEC standard referenced in this Code of Practice (i.e. BS EN/IEC 61869-2; BS EN/IEC 61869-3; BS EN/IEC 61869-4). **This is only for measurement transformers where the same accuracy class is available and limits of error and phase displacement have not changed from the BS EN/IEC standard referenced in this Code of Practice (i.e. BS EN/IEC 61869-2; BS EN/IEC 61869-3; BS EN/IEC 61869-4); or**
- All measurement transformers purchased prior to the implementation<sup>6</sup> of the latest version of the applicable BS EN/IEC standard referenced in this Code of Practice (i.e. BS EN/IEC 61869-2; BS EN/IEC 61869-3; BS EN/IEC 61869-4) should be in accordance with the previous version of the applicable BS EN/IEC standard that the latest version has superseded. **This is only for stocks of measurement transformers held to be used up and does not allow measurement transformers to be purchased to an older version of a BS EN/IEC standard where the same accuracy class is not available or limits of error and phase displacement have changed.**

<sup>5</sup> This condition is in effect until this Code of Practice has been updated to reference the latest versions of the applicable BS EN/IEC standard.

<sup>6</sup> This condition is in effect from when this Code of Practice has been updated to reference the latest versions of the applicable BS EN/IEC standard.





# MONITORING OF VOLTAGE FAILURE ALARMS

---

## Monitoring of Voltage failure alarms

---

Following a recent ADR issue specify the alarms that must be programmed into a Meter for monitoring voltage failure

### **Proposed Update to CoP2 5.1.3:**

Monitoring facilities for voltage transformers shall be provided for the following condition:-

- (i) phase failure of any one or combination of phases.

The phase failure alarm shall remain active so long as the fault condition exists.

The phase failure alarm must be dedicated to the monitoring of voltage transformers and not be combined with any other monitoring of prevailing conditions (such as an alarm monitoring for the condition where there is current being seen by the Meter but no voltage).

Meters combining integral Outstations shall provide for the data to be identified with an alarm indicating phase failure and tagged to the relevant Demand Period(s) and shall be reported via on-line communications and the local Interrogation Unit to the CDCA or Data Collector, as the case may be.

For separate Outstations, an alarm may be used which shall incorporate a time delay feature so as to avoid spurious operation. A spare channel on the Outstation or any other available means may be used to transmit the alarm and shall be reported via on-line communications and the local Interrogation Unit to the CDCA or Data Collector, as the case may be.

Where the separate Outstation cannot transmit the alarm to the CDCA or Data Collector, as the case may be, this alarm shall provide notification of a phase failure by the next Working Day at a point which is normally manned.



# PRIORITY SCORES



Priority Scores (1 of 2)

ID	Title	Industry Priority Rank	Elexon Priority Rank
A_01	Consolidation of the CoPs and Remove Obsolete Requirements	12	1
A_02	Half Hourly (HH) vs Non-HH (NHH) requirements	15	14
A_03	Duplicate communications paths for Metering Equipment within CoPs 1 and 2	14	=8
A_04	Manufacturers for main and check Meters and calibration checks requirements	7	4
A_05	De-energised circuits	9	=8
A_06	Use of MWh vs kWh	6	16
A_07	Consideration of DMP vs AMP – Metering Dispensations and the need to compensate (if necessary)	3	6
A_08	Number of measuring elements	1	=12
A_09	Tightening the minimum accuracy classes for Meters (CoP5) and CTs (CoPs 3, 5 and 10)	16	=12

Priority Scores (2 of 2)

ID	Title	Industry Priority Rank	Elexon Priority Rank
A_10	Accuracy of Active Energy for sites providing Reactive Energy Services (e.g. Stability Pathfinder project)	2	2
A_11	Relevant CoP for embedded circuits	4	=10
A_12	Future proofing changes to BS EN/IEC Standards	8	15
A_13	Security of using public IP addresses for Communications to Metering Systems	11	5
A_14	Requirement to provide SLDs for HV and EHV sites	10	=10
A_15	Monitoring of Voltage failure alarms	13	7
A_16	Obsolete Metering Equipment	5	3
A_17	Settlement Outstation memory requirements	17	17



# NEXT STEPS



MEETING CLOSE

# ELEXON

## THANK YOU

---

**Andrew Grace**

---

[andrew.grace@elexon.co.uk](mailto:andrew.grace@elexon.co.uk)

[bsc.change@elexon.co.uk](mailto:bsc.change@elexon.co.uk)

14 June 2021